CW#33A: Area & Circumference of Circles

Geometry

Thursday, Oct. 29th

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP: \_\_\_\_\_\_\_

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| From your notes, complete the equations below:  Area of a circle =  Diameter = | | | | |
| 1) a) Label the radius of the circle (your notes will help here!)  b) Find the area of the circle. Use your calculator’s value of pi. Round your answer to the nearest tenth. | | 2)  a) Find the radius given the formula for diameter above.  b) Find the area of the circle. Use your calculator’s value of pi. Round your answer to the nearest tenth. | | |
| 3)  a) Write the formula for the area of a circle.  b) If you’re given that the area of the circle is 36 km2, what in your formula would change? Why? c) Solve for the radius given the area in part b.  d) Given the radius you just found in part c, calculate the diameter of the circle. | | 4)  a) Use your notes to label the radius of this circle.  b) Use the radius and the formula for the area of a circle to calculate the area to the nearest tenth. | | |
| 5) How many centimeters long is the radius and diameter of a circle whose area is 121π cm2 ? (follow the same process as number 3)  Radius: \_\_\_\_\_  Diameter: \_\_\_\_\_ | | 6) How many centimeters long is the radius and diameter of a circle whose area is 144 π cm2 ?  (follow the same process as number 3)  Radius: \_\_\_\_\_  Diameter: \_\_\_\_\_ | | |
| 7) Find the area: (use the same process as number 2!) | 8) | | 1. Use a dotted line to show the whole circle that this semi circle is a part of. 2. How do you think the area of the semi circle relates to the area of a whole circle? Why? 3. Calculate the area of the semi circle given the reasoning you used in part b. | |
| 9)  a) You are filling a circular pig pen with dirt. The pen has a radius of 15 feet. Draw a picture of the pig pen.  b) Find the area of the pig pen.  c) The dirt costs $15.00 per square foot. How much money will it cost to fill the pig pen? | | 10) What is the diameter of a circle that has an area of 256π square units? | | |
| 11)  a) A circle has an area of 30 square inches. Find the radius.  b) If you double the radius, what will its new area be? | | 12) | | 1. What is the diameter of the larger circle? Explain how you knew. 2. How will the area of the shaded region be related to the area of the larger circle and the area of the smaller circle. Explain. 3. Use the area of larger circle and the smaller circle to help you calculate the area of the shaded region. |
| 13) The area of a circle whose radius is r is given by the expression πr2. Find the area of  each of the following circles to the nearest tenth of a square unit of measure:   1. a circle whose radius is 15 cm 2. a circle whose radius is 0.3 miles | | | | |

***Directions:*** Write your answer TWO ways: 1) With π and 2) Rounded to the nearest tenth.

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| P1   1. What is the circumference of a circle (should be in your notes!)? 2. Label the radius of the circle. 3. Use the radius you labeled to calculate the circumference of this circle. | P2   1. If the diameter of this orange is 5 inches, what is the radius? 2. Use the radius you found in part a to calculate the circumference. |
| 1) A quarter has a radius of 12.1 mm. Find the circumference of the quarter (use the same process you used for P1) | 2) Mr. Beutel is ordering circular cloth patches for the soccer team’s uniform. If the diameter is 9 cm, find the approximate circumference of the patch. (use the same process you used in P2) |
| P3.   1. Write down the formula for the circumference of a circle. 2. If you knew that the circumference of this pasta dish was 84.8 cm, what would change in your formula? Why? 3. Solve for the radius of this pasta dish given that the circumference is 84.8 cm. Then calculate the diameter. | 3) A bicycle tire has a circumference of 56 inches. What is the diameter of the wheel? What is the radius? (use the same process as P3) |
| 4) Find the circumference of the circle rounded to the nearest tenth. | 5) If the official basketball of both men's N.B.A. and N.C.A.A. leagues has a circumference of 30 cm, what is the diameter of the basketball? What is the radius? (same process as P3) |
| 8)a) You lay 10 inch long bricks end-to-end around the border of a circular garden. How many bricks do you need for each garden if it has a diameter of 26 feet? | b) The bricks are sold in bundles of 100. How many bundles should you buy? |
| Find the area of a circle whose radius is 4.  If the radius of the circle is doubled, what is the area?  How did doubling the radius effect the area? | If the diameter of a circle is cut in half would the area of the circle increase, decrease, or stay the same? Justify your answer with calculations. |